



**TECHNICAL SOLVENCY
WHEN FACING
SUBAQUATIC CHALLENGES**

northcomdiving 
BUCEO PROFESIONAL Y SERVICIOS MARÍTIMOS

**WELCOME TO
NORTHCOM DIVING**

NORTHCOM DIVING, S.L.

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A high-angle photograph shows three technicians in high-visibility yellow and blue work clothes focused on a complex piece of equipment, likely a submersible helmet. The helmet is blue and silver with a clear viewing window. One technician is adjusting a blue connector on the side, while another is working on the bottom. A third person's hands are visible on the right, also handling a blue connector. In the background, a large coil of red and blue cables is visible on a green surface. The overall scene is brightly lit, suggesting an indoor industrial or laboratory setting.

**OUR TEAM ALWAYS
AVAILABLE 24 HOURS A DAY,
365 DAYS A YEAR**



Underwater solutions

Our professional diving and commercial division has its origin more than 4 decades ago at the Ría of Vigo, and these days, due to a profound change in its structure, has managed to combine all that extensive experience with a technological and training evolution, positioning the company at the forefront of underwater services in Galicia in both; the private as well as in the public industrial sector.

Within our specialties, we carry out underwater services such as **class inspections, revisions, repairs and maintenance** of infrastructures, facilities and boats as well as **civil and hydraulic works**, among others.

Our operating procedures comply with the strictest reference standards and specifications in relation to certification and international classification, as what it is arranged by the IACS (*International Association of Classification Societies*) and particularly the IWS (*In Water Survey*) standards, also in addition to strictly comply with the provisions in our administrative and sectoral authorizations. These certifications authorize us us to perform regulated underwater activities to large ships and cruises. All of these aligned with our extensive professional experience, as well as the most advanced technical equipment, enable us to meet broadly with the



expectations of execution and safety in our works and underwater operations.

For our company, the training and experience of our human capital is paramount, and this added to keeping up to date with the latest developments in technological equipment, which enable us to adjust to the continuous updates in legal and security requirements for underwater works, as well as reaching new increasingly demanding horizons and challenges. In this sense, our response on the broad range of challenges posed is immediate.

Finally and arising from the current need, we have extensive experience in the environmental sector, having carried out several activities, all of them aimed at improving the quality of the aquatic environment.



OUR SERVICES

The Underwater Inspection of ships afloat

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The Underwater Inspection of ships afloat is a service in which, through our experienced divers, we carry out a throughout examination and assessment of the hull of the ship. The extensive experience and qualification of our staff, combined with the use of the latest technology in vision systems (*UHD*), lighting, air supply and communication equipment from the surface via approved umbilicals and positive pressure helmets and masks, makes it possible to evaluate from the surface if the ship is in optimal navigable conditions for the safety of the ship, passage, cargo and / or crew, as well as an evaluation from an environmental and energy efficiency perspective.

These inspections are requested by the Ship Classification Societies, as well as by the relevant maritime authorities (Captaincy Maritime), in order to check the status of the ship hull without dry-docking. Northcom Diving, like its collaborators, are certified according to the IWS "In-water survey" through which, they are able to carry out the inspection with professional divers and video filming equipment monitored on the surface. In this way we can assess if the ship is in the operational condition indicated by the certificates and therefore all operations can be carried out safely.

The International Classification Society currently certifies **Northcom Diving** to carry out this type of inspections: **Bureau Veritas**.

Within this service, we offer different types of inspections, depending on the client needs, such as:

1

Underwater inspection "In-water survey"

Normally it is carried out with CCTV video and supervised live on the surface by the rating agency. The condition of the ship's hull is inspected following class and stakeholder procedures.

2

Pre-docking inspection and / or sale-purchase

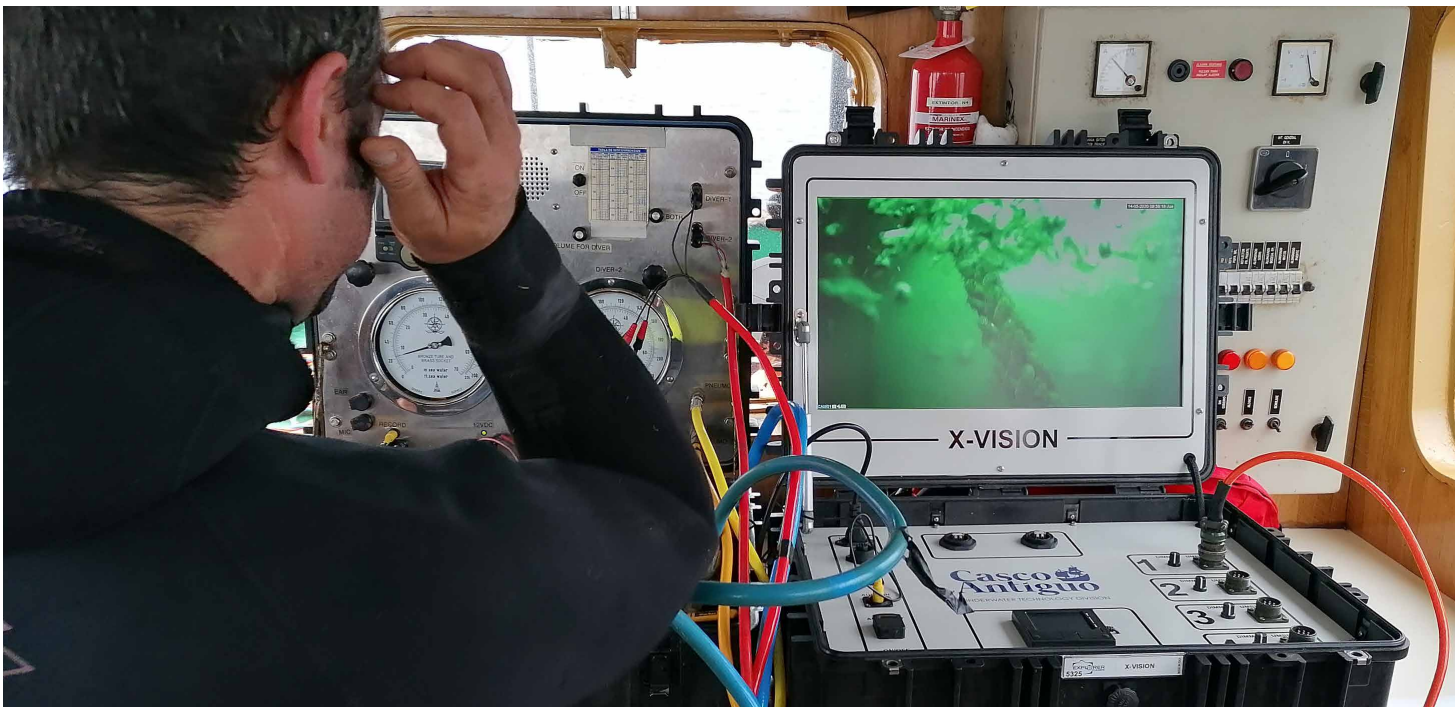
In this type of inspections, possible damage to the hull and structural elements is analyzed, as well as assessing existing damages in order to prepare a repair plan prior to docking, or the evaluation of a sale.

3

Shipowner Inspection

Through video or photography, our divers perform an inspection focused on the painting condition, cleanliness, structural damage, zinc anodes and marine life. All the collected parameters are analyzed allowing the client to make decisions.

In all these type of services, a detailed report is prepared adhering to the classification standards for all the examined elements, also including all video and audio recordings and photography submitted digitally.



OUR SERVICES

Repairs and Maintenance of ships afloat

In the aforementioned inspections, faults or lack of maintenance can be detected on ships, so they would require repairs and maintenance services, either preventively and regularly, or due to breakdowns that must be repaired by urgent corrective actions. For which **NORTHCOM DIVING** employs highly qualified divers with the needed expertise and skills as well as the means and technology to carry out these type of services. In relation to cutting and welding works and thickness measurement by ultrasound, to indicate that our staff has been trained and qualified by national institutions in this type of operations, in addition to complying with the IACS standards for evaluation of hulls. So we can offer all guarantees in the services that we provide, even in the most adverse situations, thanks to the work of our professionals.

Among the most relevant services we provide:

- Repair and maintenance of propellers and rudders.
- Cleaning and polishing to propeller. Cleaning of manoeuvre propellers, seawater intakes, grids (grills).
- Release of propellers and shafts blocked by stands, ropes, nets, etc.
- Horn closure repair, clearance measurements and axle drops.
- Location and sealing of waterways, using putties, plugs and welding.
- Welding of cathodic protections and thimbles. Installation of printed current anodes
- Clogging of discharges for valve changes.
- Installation and replacement of electronics (probes-projectors) on hull.
- Underwater measurement of thickness by ultrasound.

In addition, we are also specialists in control of both dry-docking and launching of all type of vessels in shipyards, dry docks and docks. And in these facilities we carry out the installation, inspection and maintenance of tracks and cars, as well as everything related to installation and maintenance of dock doors, gates and valves.



OUR SERVICES

Inspection, assembly and maintenance of underwater installations

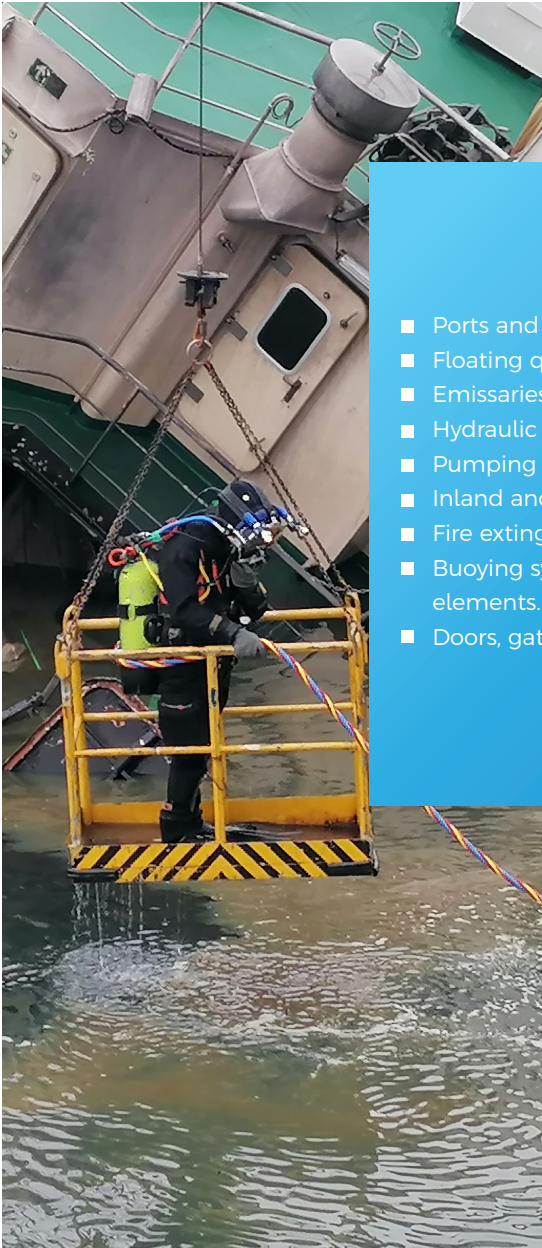
Just as inspections of ships afloat are carried out, our experience also allows us to carry out the inspection of installations and submerged structures such as piers, underwater emissaries, etc., using underwater high-resolution video systems and digital photography.

To this respect, we carry out periodic inspection of submerged structures such as foundations, bridges, piloting, dolphin docks, piers, buoys, chains, anchorage equipment, tracks in shipyards or hydraulic power plants etc... allowing the early detection of possible anomalies.

After these inspections, a detailed report is always prepared supported with audiovisual material showing the evidences detected, as well as the repair work proposal.

“Establishing a trustworthy relationship begins with a full transparency in all aspects”





Inspection activities, which are carried out, are essentially the following:

- Ports and quayside berths blocks /caissons (drawers)/ piles.
- Floating quays, fingers, floats and walkways.
- Emissaries, collectors and submarine cables. Water intakes.
- Hydraulic power plants, dams and swamps. Valves and gates and water intakes.
- Pumping stations and water purification facilities.
- Inland and marine aquaculture farms.
- Fire extinguishing tanks and storm tanks.
- Buoying systems for beaches, and/ or buoys. Anchoring of buoys and other elements.
- Doors, gates, valves, tracks and cars in dikes, shipyards and dry docks.

These inspection operations can be accompanied by repair operations and/ or maintenance of these elements either submerged or afloat. Northcom Diving has the experience, the staff and technical equipment necessary to carry out assembly and installation as well as maintenance with full guarantee of all the work executed, which can be done from land, or from the sea with support vessels.

OUR SERVICES

Maritime and Hydraulic Work

Northcom Diving has collected all the experience provided by its original parent company in the area of repairs and maintenance of maritime and hydraulic works, so it has the capacity to carry out and take part in diverse maritime and hydraulic works such as leveling, dredging, submerged formworks, cable laying, emissaries and pipes, etc. The maritime, hydraulic and / or port works sector requires the participation of experienced divers and hydraulic and pneumatic machinery for its execution such as the use of lifting balloons. So, our company has personnel specialized in hydraulic works, trained to carry out support tasks in drawer anchoring maneuvers, submerged concrete pouring, placement of blocks, pouring and leveling of foundations, execution of concrete foundations, assembly of submerged formwork among others.

The following are considered within the maritime and hydraulic works:

- Support in construction of docks and ports. (Dredging, leveling, foundations..)
- Controlled drilling, blowing-ups and demolitions.
- Bathymetry and topographic equipment.
- Laying and installation of emissaries, pipes, cables and submarine collectors on the seabed.
- Recovery of tunnel boring machines.
- Foundations in dams and bridges and concrete injection.
- Works on hydraulic systems such as dams and swamps. Dredging and cleaning of valves.
- Pressure washes and placement of anti-turbidity barriers.
- Installation of buoy anchors for offshore wind power generation systems.





“Our procedures
comply with the strictest
regulations and standards in
relation to certification
and international classification”

OUR SERVICES

Inspection services with R.O.V.

Aligned with the technological evolution, in which we are immersed, we have implemented an Operation with R.O.V. (Remote Operated Vehicles) Department made up of professionals in scientific, technical and industrial fields in the underwater sector, offering a professional service of the highest quality. **In particular, our R.O.V. can integrate different instrumentation into its arm, making it very versatile.**

The most common applications of our R.O.V. are the following:

- Inspection and filming inside emissaries and pipes, submerged structures, ship hull, docks, dams, anchorage equipment, aquaculture facilities ...
- Environmental impact assessments and filming of seabed and contamination.
- Rescue and recovery of objects from the seabed.
- Rescue missions and shipwreck inspections.
- Scientific studies with sampling (mud, sand, water). Marine flora and fauna census such as posidonia.
- Inspections at great depth, up to 300 meters with stationary positioning.

OUR SERVICES

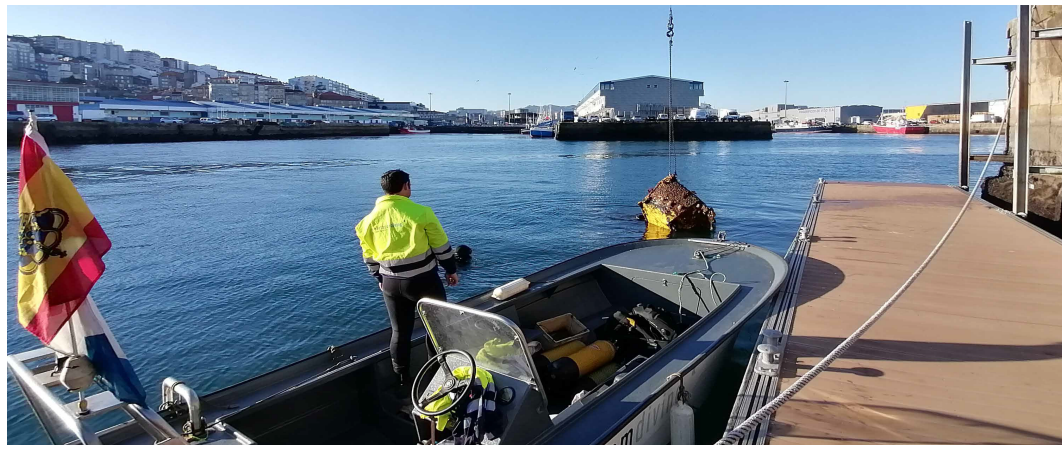
Rescue, refloating and recovery from sea bottom

Assisted by our diving equipment, as well as by our support vessels or crane trucks from land, we offer refloating services for sunken ships, in addition to recovery and extraction of any other sunken object or material, such as cars, walkways, floating docks, etc., providing a quick and agile response to any emergency.

The most common operations are the following:

- Salvage and refloating of vessels.
- Location and recovery of all kind of submerged objects.
- Recovery of heavy structures.
- Lashing of all kind of objects for their lifting.





OUR SERVICES

Environmental services

Currently, the protection of the environment and, in particular, the protection of the aquatic and marine environment, as described in the Objectives of Sustainable Development (OSD) by the United Nations, and specifically in its Objective 14 Underwater Life: **“To perseve and sustainably use our oceans, seas and marine resources for a sustainable development”**, which aims to prevent and reduce significantly all kind of marine pollution, makes Northcom Diving to be fully aligned with these objectives. Our extensive experience in the Environmental Engineering Sector and Marine Biology, allows us to contribute to achive these objectives **by offe-ring environmental works and services like the following:**

- Cleaning of the seabed and floating debris, recovery of waste for proper waste management.
- Preparation of environmental impact reports, as well as marine waste management marine and approaches for recovery of seabed.
- Biological sampling of underwater flora and fauna.
- Collection or plantation of underwater flora and fauna.
- Cleaning of sheets of water, anti-turbidity curtains, anti-pollution barriers.
- Data collection and underwater samples (water, mud, sand...) for physical and chemical analysis.
- Environmental dredging of potentially dangerous sea mud, and its management on land.
- Works in purification systems for wastewater and contaminated water. .

In this regard, our qualified staff, including marine biologists as well as environmental engineers, supports our experience in this sector.

OUR SERVICES

Improving energy efficiency of ships

As in the previous point, another of the United Nations Sustainable Development Goals (SDGs) is the Objective **No. 13 CLIMATE ACTION: “Adopt urgent measures to combat climate change and its effects”**, which requires the adoption of urgent measures to combat climate change and its effects, being the maritime sector the first to be regulated with legally binding mandatory energy efficiency requirements for greenhouse gas emissions.

Due to these obligations regarding the reduction of greenhouse gases, generated by the International maritime navigation, technical measures have been developed to improve energy efficiency and reduce greenhouse gases. And here is where Northcom Diving can help improving the performance and energy efficiency of vessels, as well as to meet the objectives of Climate Action.

In this sense, the accumulations and incrustations of marine life (flora and fauna) both in the propeller and in the ship hull, mean a greater friction with the water, since the surface in contact with the water increases, which implies a detrimental impact on the ship's hydrodynamic performance and a considerable increase in fuel consumption, thus generating an increase in the emission of greenhouse gases.

In particular, the incrustations in the propeller, as well as the corrosion and cavitation, generate a roughness on its blades, which has a direct relationship with the ship's performance and fuel efficiency. In fact, statistically speaking, a propeller without any maintenance can lead to a decrease of the speed and power of the ship up to 7%. Also it can increase considerably fuel consumption and increased wear on the transmission system.



Therefore, Northcom Diving place itself at the service of shipping companies, shipowners and shipping agents in order to improve energy efficiency and performance of ships.

Specific services for ships afloat

- Propeller mirror polishing (up to Rubert Scale A-B *), cleaning of sea intakes and rudder.
- Specific inspections of hull condition regarding marine life growth and fouling on its perimeter.
- Hull cleaning. We guarantee collection of the total waste generated during the cleaning process, as well as its correct environmental management on land.

NORTHCOM DIVING

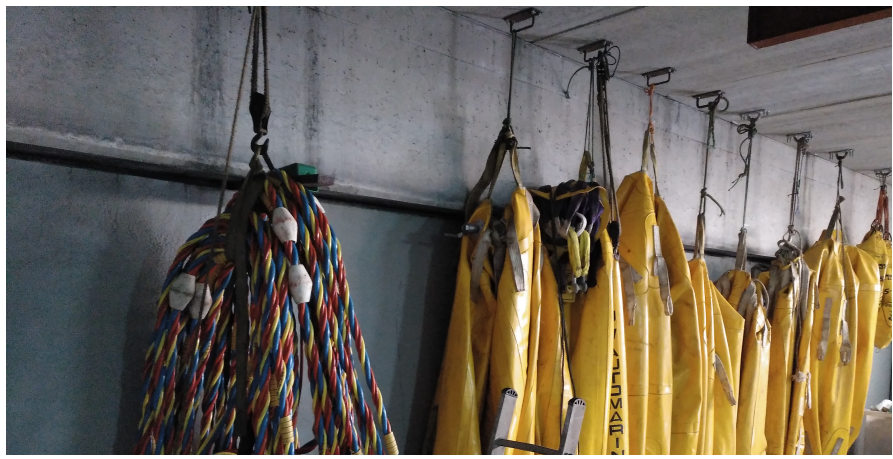
Human capital

As we have already indicated for the development of our activity, the training, preparation and experience of our staff is paramount. We have put together a multidisciplinary team, made up of professional divers from medium and small depths, biologists and environmental engineers. **The professional diving team** is qualified and experienced in underwater cutting and welding, hydraulic works, diving facilities and systems, repairs for floating and salvage of ships, underwater explosives, biological sampling as well as first aid. Also, they have specific and regulated training in measurement of thickness by ultrasound, welding with electrode in all positions as well as remote operated underwater vehicles. We also have skipper and sailor for our support boat.

So our entire human team is fundamental for us, providing the greatest value of our company and allowing us to face all projects that our clients can require, offering them always a successful solution, guaranteeing security and agility in all our works.



NORTHCOM DIVING



Facilities and equipment

Our operations center is located in a strategic enclave of the Port of Vigo; **Bouzas Repairs Pier**, which allows us to give a quick and agile response to all the needs of our clients in the Port of Vigo and its area of influence such as Marín, Pontevedra or Villagarcía. Although our activities extend across the whole of Galicia, Northern Portugal and Northern Spain. In these facilities it is where we store all the necessary equipment to carry out the diverse underwater operations, we also have a breathable air charging station authorized by the Xunta de Galicia, as well as an area for repairs and maintenance operations of our equipment. **It is also base for our technical and administration office.**

Listing of the most relevant equipment:

- Underwater ultrasonic thickness measurement system.
- Remote Operated Vehicles R.O.V. (300 meters.)
- Van equipped with streaming video, communication and gas panel systems.
- Underwater lifting balloons.
- Medium and low-pressure compressors.
- Hydraulic power stations with hydraulic brushes of various sizes and materials.
- Underwater thermal lance and welding equipment.
- Radials, hammers, pistols and pneumatic and hydraulic drills.
- Charging Station for compressed air bottles and shielded cabinet *.
- Communication and surface supply masks through umbilicals.
- Gas distribution and communication tables
- Closed TV circuit and UHD underwater cameras with lighting systems.

We certify the load of autonomous breathing air equipment, in strict compliance with the Instruction Technical Complementary ITC EP-05, "Bottles of Autonomous Respiratory Equipment" of the current regulation of Pressurized Apparatus R.D. 2060/2008.

Lastly, it should be noted that Northcom Diving has a rigid boat to support us in various works and services, also, through our collaborators, we have available to us a vessel specialized in maritime services, with crane and large capacity winch, being adapted for the underwater sector.

NORTHCOM DIVING

Legal framework

We believe that establishing a relationship of trust with our clients begins with total transparency in all respects, starting with compliance of all the specific requirements imposed by regulations for professional diving in all its specialties.

That is why to carry on our services we work in strict compliance with the current standards governing our activity:

- Royal Decree 550/2020, of June 2, which determines the safety conditions of diving activities.
- Order of April 23, 1999 of the Department of Fisheries, Seafood and Aquaculture, which regulates the exercise of professional diving in the Autonomous community of Galicia.

It is important to comply, for legal purposes, with the specific regulations for professional diving, as well as the labour legislation, and also for the tranquility of our clients, It is essential that we have a rigorous coverage due to the level of risk in our activities so that the only concern for our clients is the correct performance of the contracted works.

So we have civil and employer's liability insurance coverage, in all the range of activities that we carry out, which covers the possible eventualities that may arise.





NORTHCOM DIVING

Licenses and certificates

Diving license granted by the Consellería do Medio Rural e do Mar (Ministry of Rural and Sea Environment) of Xunta de Galicia (Galicia Government).

Dive Planning approved, for safety purposes, by Maritime Captaincy (Ministry of Public Works).

Authorization from the **Ministry of Economy and Industry of the Xunta de Galicia** (Galicia's Government) as a recharging company for autonomous respiratory equipment.

We are certified according to criteria of the marine division of the Classifier Society **Bureau Veritas** to carry out "In-Water Surveys".

In addition, Northcom Diving being aware of how important it is to guarantee the high standards and quality of the services we perform as well as risk prevention, is implementing an integrated management system that takes into account the combined assurance of quality (**ISO-9001**) as well as safety (**OSHAS 18001**)



BUREAU VERITAS

ATTESTATION

No. MDD01EX/20200519132014

Issued within the scope of the Bureau Veritas Marine & Offshore General Conditions
Délivrée dans le cadre des Conditions Générales de Bureau Veritas Marine & Offshore

Agreement of Diving Team for In-Water Surveys

This is to certify that:

Company: **NORTHCOM DIVING S.L.**
Company address: **Muelle de Reparaciones de Bouzas A-19**

36208 VIGO (PONTEVEDRA)
SPAIN

. are agreed by the Society to perform in-water surveys, in lieu of periodical docking surveys on ships and mobile offshore units by diver, in presence of surveyors of the Society, within the scope of the Rules, Part A, Chapter 2 and Chapter 3 section 4.

This attestation remains valid until : **9 March 2023** **

and may be renewed for a further period of 3 years, subject to satisfactory renewal audit. This agreement is given subject to maintenance of original standards and ability of this firm, together with keeping informed the Society of any change in the information originally supplied.

At: MADRID on 19 May 2020

ISRAEL EXPÓSITO FERNÁNDEZ
By order of the Secretary



** Not later than 3 years after the date of evaluation

The latest published Rules of the Bureau Veritas Marine & Offshore and the General Conditions therein are applicable.
La dernière édition des Règlements de Bureau Veritas Marine & Offshore ainsi que les conditions Générales qui y figurent sont applicables

Any person not a party to the contract pursuant to which this certificate is delivered may not assert a claim against Bureau Veritas for any liability arising out of errors or omissions which may be contained in said certificate, or the errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in the establishment or issuance of this certificate, and in connection with any activities for which it may provide.

Toutefois personnes qui n'est pas partie au contrat aux termes duquel ce document est délivré ne peuvent engager la responsabilité de Bureau Veritas pour les inexactitudes ou omissions qui pourraient y être relevées ainsi que pour les erreurs de jugement, fautes ou négligences commises par le personnel de la Société ou par ses agents dans l'établissement de ce document et dans l'exécution des interventions qu'il comporte.





THANK YOU



northcomdiving

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